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**APPLICATION  
FOR  
UNITED STATES  
LETTERS PATENT**

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FOR: AN APPARATUS AND A METHOD FOR  
COLLECTION OF A PROBLEM PART

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## SPECIFICATION

An apparatus and a method for collection of a problem part

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### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

The present invention relates to an apparatus and a method for collection of a problem part. More particularly, it relates to an apparatus and a method for collection of a problem part, which enable efficient collection of a problem part when a design modification is made to a problem part in a design drawing by using a CAD system.

#### 2. Related Art

In the past, collection of problem parts in a design of a product was performed manually. However, in the method of the prior art, there were the problems of missing an important modification information and not being able to collect and process data accurately.

Accordingly, it is an object of the present invention, in order to improve the drawbacks of the prior art as noted above, to provide a novel apparatus for collection problem part, a method therefor, which, when a designer makes a design modification, automatically detects a problem part and automatically collects a problem part, without human intervention.

### SUMMARY OF THE INVENTION

In order achieve the above-noted objects, the present invention adapts the following basic technical constitution.

A first aspect of an apparatus according to the present invention is a bug collection apparatus for use when a design modification is made to a bug in a drawing designed by using a computer aided design system, the apparatus comprising: a  
5 first means for detecting whether the modification to the bug exceeds a pre-established criterion, and a second means for collecting and recording a bug information corresponding to the modification when the first means detecting that the modification exceeds the pre-established criterion.

10 In the second aspect of an apparatus according to the present invention, the first means and the second means are provided separately from one another, the bug collection apparatus further comprising a third means for sending the bug information from the first means to the second means.

15 A first aspect of a method of the present invention is a method for a bug collection for use when a design modification is made to a bug in a drawing designed by using a computer aided design system, the method comprising the steps of: detecting whether or not the modification to the  
20 bug exceeds a pre-established criterion, and collecting a bug information corresponding to the modification when an information including the modification exceeding the pre-established criterion is detected in the detecting step.

A second aspect of a method of the present invention  
25 is a method for a bug collection for use when a design modification is made to a bug in a drawing designed by using a computer aided design system, the method comprising the steps of: detecting whether or not the modification to the bug exceeds a pre-established criterion, sending a bug

information corresponding to the modification to a collecting means, which is provided separately from a detecting means, for collecting and recording the bug information, when an information including the modification exceeding the pre-  
5 established criterion is detected in the detecting step, and collecting and recording the bug information to the collecting means.

#### BRIEF DESCRIPTION OF THE DRAWINGS

10 Fig. 1 is a block diagram showing the configuration of the present invention.

Fig. 2 is a functional block diagram showing the main parts of the present invention.

15 Fig. 3 is a flowchart showing the operation of the present invention.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Embodiments of the present invention are described in detailed below, with references made to relevant accompanying  
20 drawings.

Fig. 1 is block diagram showing the configuration of a problem part collection apparatus according to the present invention, Fig. 2 is a functional block diagram thereof, and Fig. 3 is a flowchart showing the operation of the present  
25 invention.

These drawings show a bug collection apparatus for use when a design modification is made to a problem part (hereinafter referred to as a bug) in a drawing designed by using a computer aided design system 1, the apparatus

comprising: a first means (detection means) 4 for detecting whether the modification to the bug exceeds a pre-established criterion, and a second means (collection means) 5 for collecting and recording a bug information corresponding to the modification when the first means 4 detecting that the above modification exceeds the pre-established criterion.

The detection means 4 and the collection means 5 are provided separately one another, and the bug information detected by the detection means 4 is sent to the collection means 5 from the detection means 4.

Additionally, these drawings show a method for a bug collection for use when a design modification is made to a bug in a drawing designed by using a computer aided design system 1, this method comprising the steps of: detecting whether or not the modification to the bug exceeds a pre-established criterion, and collecting a bug information corresponding to the modification when an information including the modification exceeding the pre-established criterion is detected in the detecting step.

The present invention is described in further detail below.

Referring to Fig. 1, in the case in which a design modification is performed by using a CAD system 1, the content of that modification is written into the modification information file 2. If this information includes modification that exceeds a pre-established criterion, this modification will be regarded as the modification corresponding to a bug, so that this bug information will be sent to a collecting means 5 by means of a mail transmission 3, so that the bug information

is collected to the collection means 5.

The present invention is described below in terms of the flowchart of Fig. 3.

Monitoring is performed to determine whether or not a  
5 modification operation is made at a CAD system 1, and if such  
a modification operation has been made (step S1), a judgment  
is made as to whether or not this modification exceeds a  
pre-established criterion (step S2). In this modification  
operation, the criterion for regarding a bug is, for example,  
10 in the case of a three-dimensional CAD system, the movement  
distance generated by the modification exceeds a given value,  
this criterion for bug detection being set beforehand. Then,  
if a bug is detected, the details of the bug information (for  
example, in the case of a three-dimensional CAD system, the  
15 operating command, the movement distance generated by the  
modification, or the operation time) are sent to the  
collection apparatus (step S3), this bug information being  
stored in a storage apparatus of the collection apparatus  
(step S4).

20 The change information 2 includes character  
information.

Additionally, it is possible to use any form of  
communication means, such as FTP transfer, as the data  
transfer means.

25 By adopting the configuration described in detail  
above, the present invention can perform automatic collection  
of design bug information. Furthermore, it features simple  
configuration and is easily implemented.